

MNWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

Gastrointestinal Illness Aboard a Cruise Ship

An outbreak of gastrointestinal illness occurred aboard the *M/S Sun Viking*, a Caribbean cruise ship, on its September 11-25 voyage. Consumption of water has been statistically associated with the disease. Attempts to isolate the etiologic agent are in progress.

Of the 511 passengers who boarded the *M/S Sun Viking* in Miami for this cruise, 285 (57%) became ill during the voyage. The disease was characterized by diarrhea, nausea and vomiting, cramps, headache, and fever. The median duration of illness was 2 days, with a range of 1-12 days. Most persons became ill on September 13, 14, or 15 (Figure 1).

Quarantine officials were notified of the outbreak on September 13. Investigations were conducted on September 14 in St. Thomas, Virgin Islands, and on September 25 and 26 after the ship docked in Miami. Questionnaires circulated to passengers indicated that the risk of illness was directly associated with the amount of water consumed ($p=.01$). Coliform bacteria in numbers too numerous to count were found in the ship's potable water distribution system.

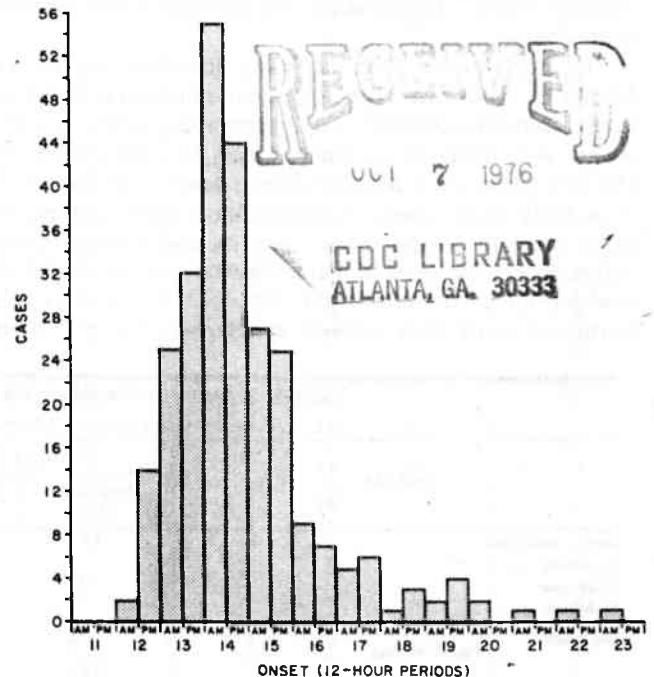
The water system aboard the *M/S Sun Viking* is constructed so that fresh water taken on board is stored in 3 separate tanks which are batch chlorinated when they are filled. Water is then pumped from these tanks through an ultra-violet (UV) light water-disinfection system and stored in 3 potable water tanks. A second pump distributes water from the potable water tanks to various points in the ship. There is no further chlorination after the UV light system. Only 1 of 4 water samples taken from points distal to the UV light system demonstrated residual chlorine levels.

Environmental investigation of the *M/S Sun Viking* demonstrated that the bilge water sometimes covers portions of the suction lines for both fresh and potable water systems. Testing with high air pressure revealed leaks in the fresh water suction line; the potable water suction line was not tested. Dye studies demonstrated that sewage leaked into the bilge. The mechanism for contamination of the ship's water system may have been suction of bilge water into the fresh water or potable water pipes.

Although the UV light system appeared to be functioning properly, water sampled distal to the UV purifier and both proximal and distal to the potable water tanks was found to be contaminated.

Several control measures were taken. As soon as the ship's water system was found to be contaminated, it was

FIGURE 1. Diarrheal Illness in Passengers aboard the *M/S Sun Viking* By Onset, September 11-23, 1976



superchlorinated and flushed; a chlorine residual was maintained in the distribution system by batch chlorination during the remainder of the cruise. After the cruise ended, the ship went into dry dock, and the suction lines were raised above the high-water mark of the bilge. In addition, temporary chlorinators were installed. The ship plans to install permanent chlorination equipment in the near future.

Reported by Quarantine Div, Field Services Div, and Enteric Diseases Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The shipping line's prompt notification of this outbreak and continuing cooperation in the investigation resulted in immediate corrective action being taken. No further cases were reported after the continuous chlorination procedures were instituted.

This is the fourth outbreak of gastrointestinal illness aboard the *M/S Sun Viking* investigated by CDC in the last 26 months. The first outbreak was due to *Salmonella enteritidis*, which was isolated from patients and the ship's

Gastrointestinal Illness — Continued

potable water system. The second and third investigations did not clearly implicate a vehicle of transmission.

In each outbreak illness began and peaked within 2 to 3 days of the ship's departure from Miami, the port of embar-

kation. Except for times of rough seas, this is the time when the bilge level is highest and hence, given leaks in the suction lines, the time when contamination in the water system is most likely.

Fatal Snakebite — Florida

A 12-year-old boy bitten by a rattlesnake while camping at the Ocala National Forest in Florida on August 1, 1976, died the next day. Death was attributed to renal failure, a consequence of the bite.

The 60-pound camper was bitten at approximately 3:35 PM on August 1, while gathering palm fronds with his 10-year-old step-brother near the outer fringe area of a State-operated youth camp located on Lake Eaton. The step-brother, the only witness, later identified the snake as a "diamond-back" (presumably the diamond-back *Crotalus adamanteus*).

The boy's health form for camp specified that he was allergic to insect bites, bee stings, and poison ivy. Camp officials administered first aid immediately, while a camp vehicle was obtained to transfer him to a local hospital. The bite marks were 3.3 centimeters apart — an indication of a fairly large snake. A constriction band was placed above the bite on the lower right leg, and a blade from a snakebite kit was used to incise the wounds. Camp officials used suction of the bite within minutes — a procedure they continued until they arrived at the hospital emergency

room less than an hour later. Camp personnel had notified a fire station emergency vehicle to intercept the camp vehicle for a hastened delivery to the hospital; they had also informed the hospital of the patient and his history of allergies.

The patient was treated with steroids, rather than anti-venom, because of his history of allergies. He died at 5:30 AM on August 2.

Attempts by camp officials to find the snake were unsuccessful.

Reported by AW Morrison Jr, RS, Environmental Health Program, EWP Smith, MD, Acting State Epidemiologist, Health Program Office, Florida Dept of Health and Rehabilitative Services; Florida Game and Fresh Water Fish Commission; and the Environmental Health Services Div, Bur of State Services, CDC.

Editorial Note: Although the mortality from snake bites is generally low, the boy's history of allergies, his small size, and the apparent large size of the snake (and thus its dosage of venom) appear to have been factors in this incident. Under most circumstances, anti-venom is the recommended treatment.

Table I. Summary—Cases of Specified Notifiable Diseases: United States

[Cumulative totals include revised and delayed reports through previous weeks]

DISEASE	39th WEEK ENDING		MEDIAN 1971-1975	CUMULATIVE, FIRST 39 WEEKS		
	October 2, 1976	September 27, 1975		October 2, 1976	September 27, 1975	MEDIAN 1971-1975
Aseptic meningitis	140	192	192	2,237	2,748	2,810
Brucellosis	3	8	4	191	181	143
Chickenpox	399	364	---	147,817	117,683	---
Diphtheria	—	—	5	124	216	143
Encephalitis						
Primary	50	175	36	821	1,338	1,095
Post-Infectious	2	6	3	208	248	224
Type B	306	253	205	11,010	8,663	6,851
Hepatitis, Viral	692	704	1,120	25,289	26,162	38,277
Type A	139	174		6,438	6,020	
Type unspecified	10	9	9	349	315	315
Malaria	88	57	83	34,551	21,370	24,371
Measles (rubeola)	26	22	17	1,201	1,119	1,084
Meningococcal infections, total	26	22	17	1,192	1,094	1,059
Civilian	—	—	—	9	25	26
Military	158	292	340	32,857	47,585	56,285
Mumps	22	25	---	733	1,152	---
Pertussis	54	60	147	10,739	14,962	21,423
Rubella (German measles)	1	3	3	43	69	69
Tetanus	635	632	---	25,135	24,791	---
Tuberculosis	—	—	2	103	89	115
Tularemia	12	11	17	303	248	279
Typhoid fever	26	20	15	768	732	577
Typhus, tick-borne (Rky. Mt. spotted fever)						
Venereal Diseases:						
Gonorrhea						
Civilian	21,359	23,771	---	754,272	741,146	---
Military	508	616	---	22,449	22,457	---
Syphilis, primary and secondary	480	524	---	18,016	19,170	---
Civilian	6	5	---	265	258	---
Military	60	59	64	2,196	1,883	2,695
Rabies in animals						

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	2	Poliomyelitis, total:	8
Botulism:	24	Paralytic:	7
Congenital rubella syndrome: Calif. 1.	18	Psittacosis:	55
Leprosy: Tex. 2, Hawaii 2	104	Rabies in man:	2
Leptospirosis: Md. 1, Tenn. 1	38	Trichinosis:	70
Plague:	15	Typhus, murine: Tex. 1	42

Table III
Cases of Specified Notifiable Diseases: United States
Weeks Ending October 2, 1976 and September 27, 1975 — 39th Week

AREA REPORTING	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
	1976	1976	1976	1976	CUM. 1976	Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified	1976	CUM. 1976
						1976	1975	1976	1976	1976	1976		
UNITED STATES	140	3	399	-	124	50	175	2	306	692	139	10	349
NEW ENGLAND	2	-	28	-	-	1	-	-	11	19	17	3	16
Maine	-	-	1	-	-	-	-	-	-	1	-	-	-
New Hampshire*	-	-	-	-	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	4	-	-	-
Massachusetts	1	-	14	-	-	1	-	-	-	3	16	3	9
Rhode Island	-	-	10	-	-	-	-	-	3	3	-	-	3
Connecticut	1	-	3	-	-	-	-	-	8	8	1	-	4
MIDDLE ATLANTIC	40	1	23	-	-	4	19	-	56	108	22	1	75
Upstate New York	23	1	3	-	-	2	3	-	15	41	4	-	15
New York City	5	-	14	-	-	1	-	-	7	11	-	1	33
New Jersey	11	-	NN	-	-	-	6	-	16	22	18	-	14
Pennsylvania	1	-	5	-	-	1	10	-	18	34	-	-	13
EAST NORTH CENTRAL ..	17	-	122	-	-	5	52	-	51	103	14	-	18
Ohio	1	-	16	-	-	-	31	-	10	31	-	-	7
Indiana	2	-	18	-	-	-	-	-	2	6	5	-	-
Illinois	3	-	11	-	-	-	-	-	16	20	7	-	2
Michigan	7	-	31	-	-	3	17	-	18	41	2	-	7
Wisconsin	4	-	46	-	-	2	4	-	5	5	-	-	2
WEST NORTH CENTRAL ..	2	-	89	-	4	5	34	-	20	24	3	1	24
Minnesota	-	-	-	-	-	-	10	-	5	5	-	1	4
Iowa*	1	-	35	-	-	1	-	-	2	-	-	-	-
Missouri*	1	-	-	-	1	1	16	-	10	11	-	-	9
North Dakota	-	-	15	-	-	-	-	-	-	2	-	-	1
South Dakota	-	-	-	-	3	-	-	-	-	3	-	-	3
Nebraska	-	-	3	-	-	-	1	-	1	-	3	-	2
Kansas	-	-	36	-	-	3	7	-	2	3	-	-	5
SOUTH ATLANTIC	8	-	20	-	-	3	11	-	33	74	13	-	59
Delaware	-	-	-	-	-	-	1	-	1	3	1	-	-
Maryland	-	-	1	-	-	-	1	-	15	10	6	-	11
District of Columbia ..	-	-	1	-	-	1	2	-	2	-	-	-	9
Virginia	-	-	-	-	-	1	-	-	2	11	4	-	8
West Virginia*	-	-	17	-	-	-	3	-	2	4	1	-	3
North Carolina	3	-	NN	-	-	-	1	-	2	10	1	-	6
South Carolina*	1	-	1	-	-	1	-	-	3	6	-	-	1
Georgia	2	-	-	-	-	-	1	-	-	24	-	-	5
Florida	2	-	-	-	-	-	2	-	6	6	-	-	16
EAST SOUTH CENTRAL ..	10	-	9	-	-	4	41	1	29	75	4	-	2
Kentucky	4	-	5	-	-	-	10	-	11	32	3	-	-
Tennessee	5	-	NN	-	-	1	10	-	10	20	-	-	-
Alabama	1	-	4	-	-	3	6	-	8	6	1	-	1
Mississippi	-	-	-	-	-	-	15	1	-	17	-	-	1
WEST SOUTH CENTRAL ..	23	2	18	-	1	24	7	-	5	30	8	1	17
Arkansas	1	-	4	-	-	-	1	-	1	12	1	-	-
Louisiana	2	-	NN	-	-	3	1	-	3	9	2	-	1
Oklahoma	-	-	9	-	-	-	4	-	1	9	5	-	2
Texas	20	2	5	-	1	21	1	-	-	-	-	1	14
MOUNTAIN	-	-	45	-	4	-	5	-	19	34	14	-	13
Montana	-	-	2	-	-	-	-	-	-	-	1	-	-
Idaho	-	-	1	-	-	-	-	-	-	1	1	-	-
Wyoming	-	-	-	-	-	-	-	-	1	-	-	-	-
Colorado	-	-	22	-	3	-	1	-	10	17	7	-	9
New Mexico	-	-	3	-	1	-	1	-	-	10	1	-	1
Arizona	-	-	NN	-	-	-	3	-	7	5	2	-	2
Utah	-	-	17	-	-	-	-	-	-	-	2	-	-
Nevada	-	-	-	-	-	-	-	-	1	1	-	-	1
PACIFIC	38	-	45	-	115	4	6	1	82	225	44	4	125
Washington	1	-	38	-	110	1	1	1	10	14	4	-	2
Oregon	4	-	1	-	-	-	1	-	4	12	3	-	5
California*	32	-	-	-	1	3	4	-	61	96	37	4	117
Alaska	-	-	-	-	3	-	-	-	2	102	-	-	-
Hawaii	1	-	6	-	1	-	-	-	5	1	-	-	1
Guam*	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	23	-	1	-	-	-	-	19	-	-	1
Virgin Islands	-	-	-	-	-	-	-	-	-	-	-	-	-

NN, Not Notifiable

*Delayed reports: Brucellosis: Iowa add 10; Chickenpox: Calif. add 3, Guam add 4; Hep B: Mo. delete 1; Hep. A: Mo. delete 1, W. Va. delete 5, S.Car. delete 2, Guam add 2; Hep. Unsp.: N. Hamp. add 2, W.Va. add 5

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending October 2, 1976 and September 27, 1975 – 39th Week

REPORTING AREA	MEASLES (Rubella)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1976	CUMULATIVE		1976	CUMULATIVE		1976	CUM. 1976	1976	1976	CUM. 1976	CUM. 1976
		1976	1975		1976	1975						
UNITED STATES	88	34,551	21,370	26	1,201	1,119	158	32,857	22	54	10,739	43
NEW ENGLAND	-	388	313	-	51	62	5	1,291	2	2	280	1
Maine	-	8	15	-	1	6	-	117	-	-	7	-
New Hampshire	-	9	22	-	4	2	1	26	-	-	11	-
Vermont	-	41	49	-	3	-	-	7	-	2	3	-
Massachusetts	-	36	111	-	14	22	-	157	1	-	135	1
Rhode Island	-	15	3	-	6	3	-	448	-	-	5	-
Connecticut	-	279	113	-	23	29	4	536	1	-	119	-
MIDDLE ATLANTIC	8	7,012	1,782	4	176	114	12	3,076	1	4	2,292	4
Upstate New York	2	2,939	591	2	65	34	3	389	1	3	606	2
New York City	1	458	148	1	46	29	5	1,616	-	-	145	1
New Jersey	-	600	462	-	25	19	2	519	-	-	1,339	-
Pennsylvania	5	3,015	581	1	40	32	2	552	-	1	202	1
EAST NORTH CENTRAL ..	57	14,721	6,378	3	150	160	47	13,508	8	23	3,996	2
Ohio	1	573	106	3	64	46	12	1,935	6	7	291	1
Indiana	7	3,295	402	-	7	9	7	1,464	-	14	744	-
Illinois	31	1,612	1,823	-	17	21	3	1,768	1	1	1,170	-
Michigan	2	5,848	3,016	-	51	64	5	4,845	-	1	1,377	1
Wisconsin	16	3,393	1,031	-	11	20	20	3,496	1	-	414	-
WEST NORTH CENTRAL ..	1	1,142	4,973	-	70	68	10	3,332	-	2	399	6
Minnesota	-	422	182	-	12	16	-	546	-	-	27	1
Iowa	-	35	574	-	9	6	-	1,198	-	-	84	-
Missouri*	-	18	269	-	27	34	2	335	-	-	42	2
North Dakota	-	3	1,052	-	3	-	-	123	-	-	3	1
South Dakota	-	4	356	-	1	1	2	9	-	1	20	1
Nebraska	-	55	395	-	5	2	-	101	-	-	3	-
Kansas	1	605	2,145	-	13	9	6	1,020	-	1	220	1
SOUTH ATLANTIC	2	2,160	342	5	225	234	8	2,517	2	7	1,292	8
Delaware	-	128	35	-	8	7	-	59	-	-	34	-
Maryland	-	715	48	1	19	27	2	687	-	-	3	3
District of Columbia ..	-	13	1	-	2	5	-	105	-	-	45	-
Virginia	2	768	37	-	29	19	1	201	-	-	234	1
West Virginia	-	191	154	-	7	5	4	763	-	7	307	-
North Carolina	-	17	2	1	44	42	1	377	1	-	17	-
South Carolina	-	4	-	-	36	34	-	45	1	-	590	-
Georgia	-	2	40	2	22	14	-	-	-	-	2	-
Florida	-	322	25	1	58	81	-	280	-	-	60	4
EAST SOUTH CENTRAL ..	4	841	293	2	111	161	9	2,787	-	-	367	7
Kentucky*	2	752	85	2	21	68	-	960	-	-	166	2
Tennessee	2	72	178	-	46	50	7	1,496	-	-	189	4
Alabama	-	-	5	-	31	29	2	274	-	-	1	1
Mississippi	-	17	25	-	13	14	-	57	-	-	11	-
WEST SOUTH CENTRAL ..	6	713	325	9	193	174	29	2,356	1	1	530	8
Arkansas	-	-	-	-	11	10	3	80	-	-	190	-
Louisiana	-	202	1	-	36	30	-	22	-	-	86	2
Oklahoma	1	293	131	-	21	10	14	671	-	-	71	-
Texas	5	218	193	9	125	124	12	1,583	1	1	183	6
MOUNTAIN	-	5,075	1,406	-	42	34	2	1,123	-	2	478	1
Montana	-	204	50	-	4	7	-	21	-	-	235	-
Idaho	-	2,020	12	-	6	5	-	443	-	-	18	-
Wyoming	-	4	1	-	-	-	-	1	-	-	2	-
Colorado	-	307	1,158	-	11	9	2	225	-	-	23	-
New Mexico*	-	15	13	-	4	4	-	127	-	-	31	-
Arizona	-	226	79	-	10	1	-	-	-	-	-	1
Utah	-	2,234	66	-	5	7	-	190	-	2	150	-
Nevada	-	65	27	-	2	1	-	116	-	-	19	-
PACIFIC	10	2,499	5,558	3	183	112	36	2,867	8	13	1,105	6
Washington	2	343	290	-	31	17	5	859	6	1	168	1
Oregon	-	165	197	-	17	5	8	366	-	-	135	1
California	8	1,984	5,007	3	113	84	22	1,585	2	12	781	4
Alaska	-	4	-	-	19	5	-	23	-	-	1	-
Hawaii	-	3	64	-	3	1	1	34	-	-	20	-
Guam*	-	13	31	-	1	2	-	14	-	-	5	-
Puerto Rico	9	413	626	-	3	1	19	720	2	-	9	5
Virgin Islands	-	13	8	-	-	-	-	27	-	-	8	1

*Delayed reports: Measles: Ky, delete 1; Men. Inf: Mo, add 1; Mumps: Guam add 1; Pertussis: N. Mex, add 3

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending October 2, 1976 and September 27, 1975 - 39th Week

REPORTING AREA	TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1976	CUM. 1976	CUM. 1976	1976	CUM. 1976	1976	CUM. 1976	1976	CUMULATIVE		1976	CUMULATIVE		CUM. 1976
									1976	1975		1976	1975	
UNITED STATES	635	25,135	103	12	303	26	768	21,359	754,272	741,146	480	18,016	19,170	2,196
NEW ENGLAND	27	895	1	-	23	-	7	594	21,264	20,245	17	604	686	65
Maine	3	64	-	-	-	-	-	46	1,762	1,586	-	17	21	32
New Hampshire	-	35	-	-	2	-	-	24	624	552	1	8	13	1
Vermont	1	25	-	-	-	-	-	16	523	506	-	9	6	-
Massachusetts	19	533	1	-	14	-	4	259	10,127	9,315	12	435	454	22
Rhode Island	3	66	-	-	-	-	2	82	1,460	1,666	-	17	16	4
Connecticut	1	172	-	-	7	-	1	167	6,768	6,620	4	118	176	6
MIDDLE ATLANTIC	93	4,746	3	7	51	7	54	1,731	87,322	87,313	68	2,998	3,528	58
Upstate New York	5	727	2	1	9	4	23	290	13,943	15,396	2	176	331	11
New York City	46	1,935	1	2	24	-	5	808	39,344	37,601	47	1,874	2,047	-
New Jersey	21	927	-	2	11	2	12	217	13,286	12,356	8	445	552	29
Pennsylvania	21	1,157	-	2	7	1	14	416	20,749	21,960	11	503	598	18
EAST NORTH CENTRAL ..	95	3,560	1	1	28	-	17	3,427	119,090	121,099	27	1,561	1,558	145
Ohio*	24	687	-	-	11	-	14	931	29,408	33,424	16	375	384	31
Indiana	9	405	-	-	-	-	-	606	12,129	10,982	-	87	127	21
Illinois	18	1,225	1	1	8	-	-	737	40,735	41,275	7	848	737	22
Michigan*	37	1,048	-	-	8	-	3	811	25,512	23,699	2	170	248	7
Wisconsin	7	195	-	-	1	-	-	342	11,306	11,719	2	81	62	64
WEST NORTH CENTRAL ..	16	913	26	2	19	2	25	1,027	39,708	37,009	5	329	469	507
Minnesota	-	163	3	1	9	-	-	228	7,052	7,570	1	75	92	114
Iowa	2	86	1	-	1	-	3	94	4,990	5,179	-	35	25	105
Missouri*	10	449	18	1	6	1	12	364	15,999	13,425	4	135	219	52
North Dakota	-	25	-	-	-	-	-	25	614	576	-	-	5	107
South Dakota	1	39	1	-	1	-	3	32	1,137	1,429	-	4	5	55
Nebraska*	1	42	-	-	1	-	-	118	3,417	3,328	-	26	16	13
Kansas*	2	109	3	-	1	1	7	166	6,499	5,502	-	54	107	61
SOUTH ATLANTIC	152	5,333	7	1	41	10	392	5,587	182,981	182,209	138	5,201	5,973	350
Delaware*	-	59	-	-	-	-	1	73	2,579	2,645	1	54	69	17
Maryland	26	747	1	-	4	-	21	648	24,386	21,939	11	428	431	11
District of Columbia ..	14	237	-	-	-	-	-	282	10,609	10,631	12	458	526	-
Virginia*	1	797	2	-	4	6	93	669	19,204	18,149	18	509	457	54
West Virginia	4	213	-	1	5	-	8	65	2,333	2,281	1	20	48	13
North Carolina*	33	990	3	-	2	3	163	784	26,727	25,600	8	925	748	13
South Carolina	4	396	-	-	4	1	48	403	17,155	16,838	8	295	422	5
Georgia	27	659	1	-	3	-	46	1,651	35,721	34,223	21	596	792	165
Florida	43	1,235	-	-	19	-	2	1,012	44,267	49,903	58	1,916	2,480	72
EAST SOUTH CENTRAL ..	41	2,134	14	-	14	4	147	2,206	67,155	63,020	19	719	850	105
Kentucky	-	435	1	-	6	2	32	302	8,725	8,278	5	102	130	50
Tennessee	28	688	13	-	7	-	87	830	26,833	24,737	4	246	323	35
Alabama	7	626	-	-	1	1	11	565	18,832	17,554	7	151	195	20
Mississippi	6	385	-	-	-	1	17	509	12,765	12,451	3	220	202	-
WEST SOUTH CENTRAL ..	86	2,990	37	-	13	3	127	2,477	96,329	91,459	71	2,172	1,644	487
Arkansas	10	363	20	-	4	-	19	144	8,893	9,910	6	76	50	120
Louisiana*	10	497	2	-	2	-	-	414	13,986	16,411	17	445	362	5
Oklahoma	12	280	7	-	1	2	92	264	9,306	8,786	3	80	63	116
Texas	54	1,850	8	-	6	1	16	1,655	64,144	56,352	45	1,571	1,169	246
MOUNTAIN	31	707	4	-	20	-	4	878	29,329	29,371	25	607	440	161
Montana*	-	39	2	-	2	-	1	38	1,555	1,598	-	8	4	64
Idaho	-	18	-	-	1	-	1	42	1,623	1,481	-	29	11	-
Wyoming	-	16	1	-	-	-	-	20	596	710	-	8	10	1
Colorado	9	120	-	-	5	-	1	214	7,713	7,357	3	122	72	51
New Mexico	7	137	-	-	2	-	1	205	5,748	5,319	19	226	118	3
Arizona*	13	315	-	-	9	-	-	243	8,623	7,930	3	170	166	25
Utah	-	35	1	-	1	-	-	83	1,595	1,867	-	18	13	17
Nevada	2	27	-	-	-	-	-	33	1,876	3,109	-	26	46	-
PACIFIC	94	3,857	10	1	94	-	5	3,432	111,094	109,421	110	3,825	4,022	318
Washington*	12	293	2	-	5	-	3	374	9,426	10,005	20	112	142	6
Oregon	2	146	1	-	-	-	-	169	7,854	8,335	4	87	108	10
California	72	2,874	7	1	87	-	2	2,687	88,093	86,614	85	3,530	3,723	262
Alaska	-	71	-	-	-	-	-	151	3,173	2,634	-	17	6	40
Hawaii	8	473	-	-	2	-	-	51	2,548	1,833	1	79	43	-
Guam*	-	34	-	-	1	-	-	-	232	317	-	2	16	-
Puerto Rico	5	309	-	-	1	-	-	51	2,095	2,201	15	452	546	36
Virgin Islands	-	5	-	-	-	-	-	4	194	150	1	48	28	-

*Delayed reports: TB: Ohio delete 5, Mich. delete 1, Mo. delete 1, Kans. delete 1, Va. delete 2, N. Car. delete 6, Ariz. add 5, Wash. add 30; Tularemia: Mo. delete 1; GC: Neb. delete 1, Dela. delete 10, La. delete 9, Wash add 75 (Mil), Guam add 3; Syphilis: La. add 2; An. Rabies: Mont. add 11

Table IV
Deaths in 121 United States Cities
Week Ending October 2, 1976 - 39th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES	REPORTING AREA	ALL CAUSES					Pneumonia and Influenza ALL AGES
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year			ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	
NEW ENGLAND	632	415	146	30	15	44	SOUTH ATLANTIC	1,060	590	320	70	49	36
Boston, Mass.	156	96	38	11	2	7	Atlanta, Ga.	130	68	37	11	9	4
Bridgeport, Conn.	49	32	16	1	-	2	Baltimore, Md.	198	111	61	12	10	6
Cambridge, Mass.	19	11	6	1	-	-	Charlotte, N. C.	45	17	17	6	3	1
Fall River, Mass.	21	16	2	1	-	1	Jacksonville, Fla.	91	62	18	6	2	1
Hartford, Conn.	58	30	19	5	3	-	Miami, Fla.	106	56	40	5	5	4
Lowell, Mass.	29	24	5	-	-	3	Norfolk, Va.	42	23	16	2	1	3
Lynn, Mass.	19	17	2	-	-	1	Richmond, Va.	75	35	30	6	4	4
New Bedford, Mass.	27	19	4	1	2	-	Savannah, Ga.	44	26	10	2	1	2
New Haven, Conn.	50	35	5	2	2	2	St. Petersburg, Fla.	67	49	12	4	2	2
Providence, R.I.	69	40	21	3	2	14	Tampa, Fla.	74	49	17	3	1	6
Somerville, Mass.	6	5	1	-	-	2	Washington, D. C.	153	75	51	12	9	3
Springfield, Mass.	48	37	8	2	-	5	Wilmington, Del.	35	19	11	1	2	-
Waterbury, Conn.	25	20	4	1	-	2							
Worcester, Mass.	56	33	15	2	4	5							
MIDDLE ATLANTIC	2,702	1,641	699	191	85	123	EAST SOUTH CENTRAL	734	400	219	49	37	23
Albany, N. Y.	47	28	11	4	1	1	Birmingham, Ala.	122	57	44	8	5	1
Allentown, Pa.	26	17	7	2	-	1	Chattanooga, Tenn.	51	26	21	3	-	2
Buffalo, N. Y.	125	74	29	7	9	10	Knoxville, Tenn.	34	24	8	1	-	-
Camden, N. J.	37	23	14	-	-	-	Louisville, Ky.	114	66	33	8	6	10
Elizabeth, N. J.	21	14	4	1	2	-	Memphis, Tenn.	180	96	57	9	10	4
Erie, Pa.	42	31	6	2	3	1	Mobile, Ala.	65	37	17	4	4	1
Jersey City, N. J.	43	30	11	2	-	2	Montgomery, Ala.	38	20	9	3	5	-
Newark, N. J.	74	26	33	7	5	3	Nashville, Tenn.	130	74	30	13	7	5
New York City, N. Y.	1,303	799	335	100	32	37							
Paterson, N. J.	32	17	11	-	3	2	WEST SOUTH CENTRAL	982	530	289	80	49	33
Philadelphia, Pa.	394	230	104	28	14	28	Austin, Tex.	39	25	11	1	-	1
Pittsburgh, Pa.	191	112	46	15	9	18	Baton Rouge, La.	38	12	14	6	3	1
Reading, Pa.	30	22	6	1	-	3	Corpus Christi, Tex.	29	18	9	-	1	1
Rochester, N. Y.	117	70	30	8	5	6	Dallas, Tex.	149	69	50	20	5	4
Schenectady, N. Y.	23	16	4	1	1	1	El Paso, Tex.	55	31	14	3	3	8
Scranton, Pa.	23	14	9	-	-	1	Fort Worth, Tex.	72	48	14	4	3	5
Syracuse, N. Y.	71	41	20	7	1	1	Houston, Tex.	198	94	60	17	21	2
Trenton, N. J.	43	29	10	3	-	-	Little Rock, Ark.	48	35	11	1	1	6
Utica, N. Y.	29	22	5	2	-	5	New Orleans, La.	133	68	39	15	5	-
Yonkers, N. Y.	31	26	4	1	-	3	San Antonio, Tex.	112	65	38	5	2	4
							Shreveport, La.	42	22	14	2	4	-
							Tulsa, Okla.	67	43	15	6	1	1
EAST NORTH CENTRAL	2,223	1,268	641	120	91	50	MOUNTAIN	486	284	112	39	17	12
Akron, Ohio	49	28	13	3	3	-	Albuquerque, N. Mex.	38	21	11	3	2	2
Canton, Ohio	42	23	17	1	1	2	Colorado Springs, Colo.	25	15	8	-	-	2
Chicago, Ill.	546	300	164	33	24	11	Denver, Colo.	91	56	20	10	-	2
Cincinnati, Ohio	157	81	55	6	9	4	Las Vegas, Nev.	15	12	3	-	-	-
Cleveland, Ohio	180	102	54	6	5	4	Ogden, Utah	14	10	1	1	1	1
Columbus, Ohio	135	74	40	8	6	6	Phoenix, Ariz.	140	73	40	12	5	-
Dayton, Ohio	104	66	29	2	3	2	Pueblo, Colo.	20	11	4	3	-	1
Detroit, Mich.	262	146	69	24	12	2	Salt Lake City, Utah	43	25	7	1	4	2
Evansville, Ind.	49	29	13	2	1	4	Tucson, Ariz.	100	61	18	9	5	2
Fort Wayne, Ind.	66	35	18	3	9	3							
Gary, Ind.	17	7	6	3	1	-	PACIFIC	1,621	981	417	104	52	37
Grand Rapids, Mich.	40	22	12	3	2	3	Berkeley, Calif.	15	7	7	1	-	-
Indianapolis, Ind.	144	86	39	4	5	4	Fresno, Calif.	67	34	21	6	1	-
Madison, Wis.	42	19	14	4	2	2	Glendale, Calif.	29	23	6	-	-	2
Milwaukee, Wis.	131	83	33	8	3	-	Honolulu, Hawaii	57	26	23	4	3	1
Peoria, Ill.	33	22	5	-	1	1	Long Beach, Calif.	91	62	22	3	1	1
Rockford, Ill.	44	33	8	1	1	1	Los Angeles, Calif.	489	292	121	39	19	12
South Bend, Ind.	35	24	8	1	2	-	Oakland, Calif.	63	40	17	3	1	1
Toledo, Ohio	89	57	22	7	-	1	Pasadena, Calif.	32	21	7	1	1	3
Youngstown, Ohio	58	31	22	1	1	-	Portland, Oreg.	113	66	27	8	10	-
							Sacramento, Calif.	64	33	20	4	2	-
WEST NORTH CENTRAL	700	445	156	47	28	29	San Diego, Calif.	144	71	48	10	5	1
Des Moines, Iowa	55	33	15	4	2	1	San Francisco, Calif.	161	103	40	11	-	5
Duluth, Minn.	26	21	1	3	-	1	San Jose, Calif.	56	32	18	4	1	-
Kansas City, Kans.	29	16	10	1	-	2	Seattle, Wash.	141	102	25	3	5	7
Kansas City, Mo.	117	72	28	9	3	1	Spokane, Wash.	53	36	7	3	3	4
Lincoln, Nebr.	29	18	7	1	1	2	Tacoma, Wash.	46	33	8	4	-	-
Minneapolis, Minn.	94	65	18	5	5	3							
Omaha, Nebr.	66	41	18	2	2	3	TOTAL	11,140	6,554	2,999	730	423	387
St. Louis, Mo.	159	102	31	12	9	12	Expected Number	11,619	6,877	3,074	787	409	368
St. Paul, Minn.	67	48	13	4	1	2							
Wichita, Kans.	58	29	15	6	5	2							

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The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn.: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

Send mailing list additions, deletions, and address changes to: Center for Disease Control, Attn.: Distribution Services, GSO, 1-SB-36, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Salmonella Meningitis — New York

A fatal case of recurrent salmonella meningitis in an adult has been reported from New York. *Salmonella enteritidis*, serotype enteritidis, was recovered twice from the patient's spinal fluid.

The patient, a 57-year-old man, was admitted to the hospital on September 25, 1975, complaining of severe headache of 2 hours duration. He had a temperature of 103.6 F with a rigid neck and a positive Kernig's sign. He was a chronic alcoholic and had arteriosclerotic heart disease. Lumbar puncture revealed turbid cerebrospinal fluid (CSF) with numerous WBCs; CSF protein was 537 mg %, and the glucose was 24 mg %. A Gram-stained smear of the CSF showed no bacteria but the culture subsequently yielded *Salmonella enteritidis*, serotype enteritidis, (group D *Salmonella*). A blood culture from September 25 was sterile. The patient was started on intravenous ampicillin therapy. On the basis of the modified Kirby-Bauer susceptibility technique, the isolate was found to be sensitive to ampicillin, chloramphenicol, streptomycin, tetracycline, colymycin, kanamycin, cephalothin, carbenicillin, and gentamicin. A repeat lumbar puncture on September 29 was normal. The patient responded to treatment and was discharged on October 24 in satisfactory condition.

On November 9, the patient was seen in the emergency room because of vomiting and abdominal pain. His temperature was 101 F; neck rigidity and Kernig and Brudzinski signs were present. His serum amylase was 679 IU/l. The diagnosis was acute pancreatitis with possible recurrent meningitis; intravenous ampicillin was begun. On November 10, a lumbar puncture revealed yellow, turbid cerebrospinal fluid with numerous WBCs; no bacteria were seen on the smear. The patient expired on November 11. Consent for an autopsy was not granted. A blood culture from November 10 was sterile. *Salmonella enteritidis*, serotype enteritidis, recovered from spinal fluid obtained November 10, demonstrated the same susceptibility pattern of the first CSF isolate. Species identification of both salmonellae isolated was performed.

Current Trends

A widespread outbreak of influenza-like illness has occurred in the civilian population of Guam. An A/Victoria/75-like virus has been isolated from a patient with onset of clinical influenza on September 23. Four chronically ill or elderly patients have died with influenza-like illness.

Emergency room visits began to increase on September 19. Investigation is continuing to determine the extent of

Reported by M Birnbaum, MS, JL Efraxiades, MD, SM Farrer, MD, LP Pillitteri, MD, J Uribarri, MD, and TH Young, MD, PhD, Cumberland Hospital, Brooklyn; Enteric Bacteriology Laboratory, JS Marr, MD, New York City Epidemiologist, Bureau of Infectious Disease Control, New York City; Bur of Laboratories, Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: *Salmonella* is an unusual pathogen in meningitis. Of approximately 3,600 human isolates from the 10 most common serotypes of *Salmonella* received by CDC since July 1972, 3 were from CSF (0.1%). Other studies have reported that 0.4 to 0.8% of salmonella isolates were from Central Nervous System (CNS) infection (1, 2). Two cases of salmonella meningitis were found in 4 recent community-based studies of bacterial meningitis spanning 7.6 million person-years — an incidence of 0.3 cases per million person-years (3,4,5,6). *Salmonella* meningitis is reported most commonly in infants, although no comparative rates by age are known.

Recurrent meningitis may result from reinfection or inadequate therapy such as failure to eradicate an area of sequestration. No known cause for recurrence in this patient was apparent.

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Influenza — United States

the outbreak. No indication of current influenza-like activity has been received from elsewhere in the Pacific or on the U. S. mainland.

Reported by RL Haddock, DVM, Territorial Epidemiologist, Guam Bureau of Public Health and Social Services; Field Services Div, Bur of Epidemiology, National Influenza Immunization Program, CDC.

International Notes

Quarantine Measures

The following change should be made in the *Supplement — Health Information for International Travel*, MMWR, Vol. 24, December 1975:

JAPAN

Smallpox — Delete all information. Insert code 11. Insert: A Certificate is ALSO required from travelers arriving from:

Africa: Ethiopia Asia: Bangladesh

Current Trends**Primary and Secondary Syphilis — United States, August 1976**

Reported cases of primary and secondary syphilis numbered 1,965 in August 1976 — 6.3% less than the number of cases reported in August 1975. During the first 8 months of 1976, 15,938 cases were reported; this was 1,068 cases

or 6.3% less than the number reported during the same period of 1975.

Reported by Venereal Disease Control Div, Bur of State Services, CDC.

Summary of Reported Primary and Secondary Syphilis Cases by Reporting Area
Month 1976 and Month 1975 — Provisional Data

Reporting Area by HEW Regions	August		Calendar Year Cumulative January–August		Reporting Area by HEW Regions	August		Calendar Year Cumulative January–August		Reporting Area by HEW Regions	August		Calendar Year Cumulative January–August	
	1976	1975	1976	1975		1976	1975	1976	1975		1976	1975	1976	1975
Connecticut	10	10	107	152	Illinois (Excl. Chicago)	9	20	100	195	Arizona	17	21	154	165
Maine	4	9	16	26	Chicago	100	63	619	512	California (Excl. LA & SF)	173	143	1,381	1,197
Massachusetts	52	35	343	373	Indiana (Excl. Indianapolis)	6	15	56	80	Los Angeles*	186	146	1,226	1,268
New Hampshire	1	1	7	12	Indianapolis*	3	5	25	29	San Francisco*	76	57	520	631
Rhode Island	1	4	16	12	Michigan	16	24	162	225	Hawaii	9	0	65	34
Vermont	3	0	8	6	Minnesota	10	9	68	76	Nevada	1	4	30	37
REGION I TOTAL	71	59	497	581	Ohio	31	48	323	324	REGION IX TOTAL	462	371	3,376	3,332
New Jersey	46	61	382	527	Wisconsin	7	1	71	53	Alaska	2	2	16	5
New York (Excl. NYC)	15	37	163	296	REGION V TOTAL	182	185	1,424	1,494	Idaho	2	2	17	12
New York City	210	263	1,633	1,929	Arkansas	7	6	60	42	Oregon	9	17	71	89
REGION II TOTAL	271	361	2,178	2,752	Louisiana	27	32	390	332	Washington	11	24	101	155
Delaware	9	3	48	64	New Mexico	13	7	111	104	REGION X TOTAL	24	45	205	261
District of Columbia	39	56	394	447	Oklahoma	6	11	72	55	UNITED STATES TOTAL	1,965	2,096	15,938	17,006
Maryland (Excl. Baltimore)	18	18	132	143	Texas	157	114	1,288	983	Puerto Rico	57	51	416	517
Baltimore	33	30	274	256	REGION VI TOTAL	210	170	1,931	1,516	Virgin Islands	2	0	28	18
Pennsylvania (Excl. Phila.)	21	22	170	252	Iowa	9	3	31	25	United States, Including				
Philadelphia	46	35	287	291	Kansas	7	22	54	102	Outlying Areas	2,024	2,147	16,382	17,541
Virginia	65	61	454	404	Missouri	17	29	119	205					
West Virginia	1	3	19	20	Nebraska	5	3	26	16					
REGION III TOTAL	232	228	1,778	1,877	REGION VII TOTAL	38	57	230	348					
Alabama	20	17	131	167	Colorado	8	4	93	71					
Florida	190	303	1,717	2,239	Montana	2	0	9	4					
Georgia (Excl. Atlanta)	48	53	382	434	North Dakota	0	0	2	4					
Atlanta*	40	45	322	286	South Dakota	0	1	4	4					
Kentucky	8	14	90	119	Utah	2	1	20	11					
Mississippi	16	18	185	176	Wyoming	0	0	4	6					
North Carolina	78	83	872	685	REGION VIII TOTAL	12	6	132	100					
South Carolina	42	39	270	357										
Tennessee	21	42	218	282										
REGION IV TOTAL	463	614	4,187	4,745										

*County Data

Note: Cumulative totals include revised and delayed reports through previous months.

Source: CDC 9-98, HEW-CDC-BSS-VD Control Division, Atlanta, Georgia

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